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मानक

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IS 9592 (1989): Aluminium trifluoride for use in aluminium industry [MTD 13: Ores and Raw Materials]



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Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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Indian Standard

ALUMINIUM TRIFLUORIDE FOR USE IN
ALUMINIUM INDUSTRY — SPECIFICATION

(*First Revision*)

भारतीय मानक

एलुमिनियम उद्योग में प्रयुक्त एलुमिनियम ट्रायफ्लोराइड — विशिष्ट

(पहला पुनरीक्षण)

UDC 661.862.361 : 669.71

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

January 1990

Price Group 1

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards on 1 May 1989, after the draft finalized by the Ores and Raw Materials Sectional Committee had been approved by the Structural and Metals Division Council.

This standard was first published in 1980. With the growth of aluminium industry, the experience gained during these years in this field, it was felt necessary to revise this standard. Due to the indigenous production of aluminium trifluoride through fluosilicic acid route, a new grade has been introduced in this revision. Also, since lot of improvements have taken place in the process of manufacture of aluminium trifluoride through fluorspar route, the minimum requirement of AlF_3 content has been modified to 90 percent and the bulk density to 1 300 kg/m³.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

**AMENDMENT NO. 1 JUNE 1999
TO
IS 9592 : 1989 ALUMINIUM TRIFLUORIDE FOR USE IN
ALUMINIUM INDUSTRY — SPECIFICATION**

(First Revision)

(Page 1, Table 1, col 3, row 2) — Substitute '0.20 Max' for '0.15 Max'.

(Page 1, Table 1, col 3, last line) — Substitute '700 Min' for '750 Min'.

(MTD 13)

Reprography Unit, BIS, New Delhi, India

Indian Standard

**ALUMINIUM TRIFLUORIDE FOR USE IN
ALUMINIUM INDUSTRY—SPECIFICATION**

(First Revision)

1 SCOPE

1.1 This standard prescribes the requirements for aluminium trifluoride for use in aluminium industry.

2 REFERENCES

2.1 The following Indian Standards are necessary adjuncts to this standard:

<i>IS No.</i>	<i>Title</i>
1387 : 1967	General requirements for the supply of metallurgical materials (<i>first revision</i>)
4129 : 1967	Method of chemical analysis of aluminium trifluoride
5191 : 1968	Methods for sampling of cryolite and aluminium trifluoride
5842 : 1986	Method for measuring the bulk density of iron oxides, lump ores, sinter and pellets (<i>first revision</i>)

3 SUPPLY OF MATERIAL

General requirements relating to supply of aluminium trifluoride for use in aluminium industry shall conform to IS 1387 : 1967.

4 CHEMICAL COMPOSITION

4.1 The material, when tested either in accordance with IS 4129 : 1967 or any other established instrumental/chemical method, shall comply with the requirements given in Table 1. In case of dispute, the procedure specified in the latest edition of IS 4129 shall be the referee method. For elements not covered in IS 4129 : 1967, the referee method shall be agreed between the purchaser and the supplier.

4.2 For the determination of bulk density the method prescribed in 5.2 of IS 5842 : 1986 shall be followed.

4.3 The impurity limits and other properties given in Table 1 are the requirements of aluminium industry. However, variation in

limits of bulk density may be accepted as agreed to between the manufacturer and the purchaser.

Table 1 Composition of Aluminium Trifluoride
(*Clauses 4.1 and 4.3*)

Constituent	Percent	
	AlF ₃ Produced by Fluorspar Route	AlF ₃ Produced by Fluosilicic Acid Route
(1)	(2)	(3)
AlF ₃	90 <i>Min</i>	94 <i>Min</i>
SiO ₂	0.20 <i>Max</i>	0.15 <i>Max</i>
Fe ₂ O ₃	0.20 <i>Max</i>	0.10 <i>Max</i>
SO ₂	0.50 <i>Max</i>	0.20 <i>Max</i>
P ₂ O ₅	0.02 <i>Max</i>	0.02 <i>Max</i>
Al ₂ O ₃	By difference	By difference
Loss on ignition (LOI) at 550°C for 1/2 hours	1.00 <i>Max</i>	1.00 <i>Max</i>
Bulk density, kg/m ³	1 300 <i>Min</i>	750 <i>Min</i>

5 SAMPLING

Representative samples of aluminium trifluoride shall be drawn according to the scheme of sampling given in IS 5191 : 1968.

6 PACKING

The material shall be suitably packed in bags as agreed to between the purchaser and the manufacturer.

7 MARKING

7.1 Each bag shall be suitably marked with the following information:

- a) Name and address of the manufacturer,
- b) Batch or code number, and
- c) Net mass.

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Doc : No. MTD 13 (3376)

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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Printed at Arcee Press, New Delhi, India